inhalation therapy

October 1961
Volume 6 Number 5

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Resuscitation for

Tracheotomy Patients

What to Expect at the

Annual Meeting

The Third Story on the Workings of

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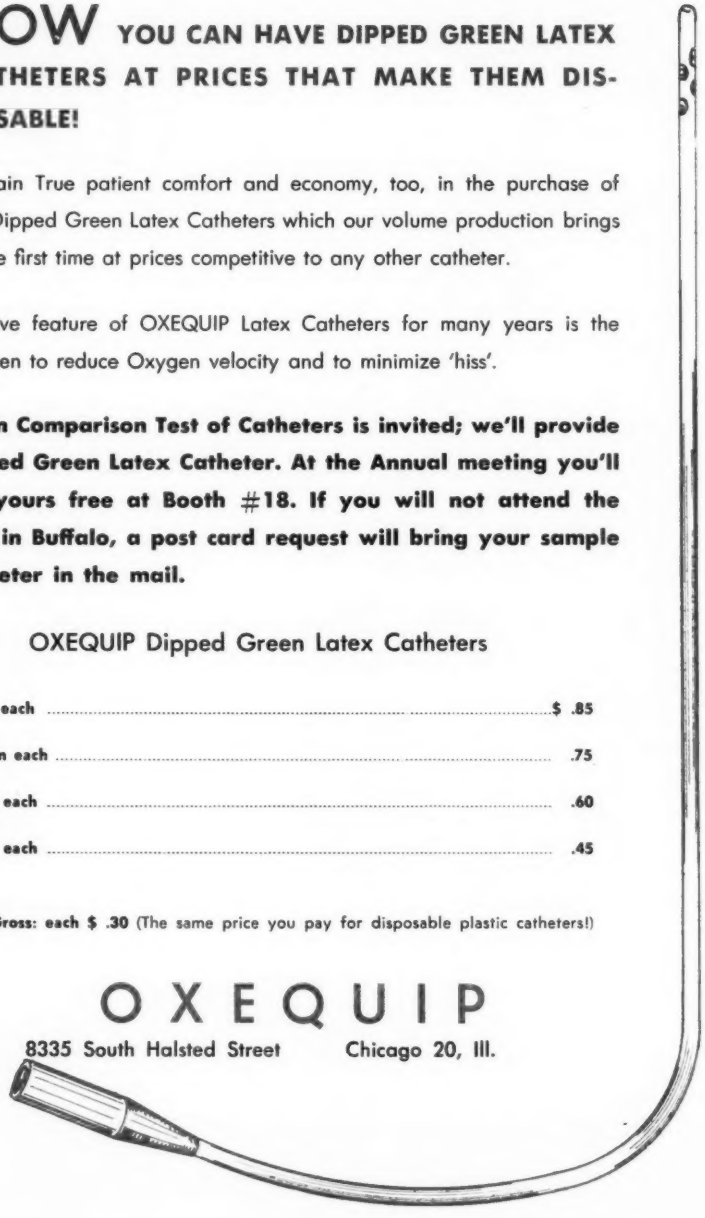

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JOURNAL OF THE AMERICAN ASSOCIATION OF INHALATION THERAPISTS

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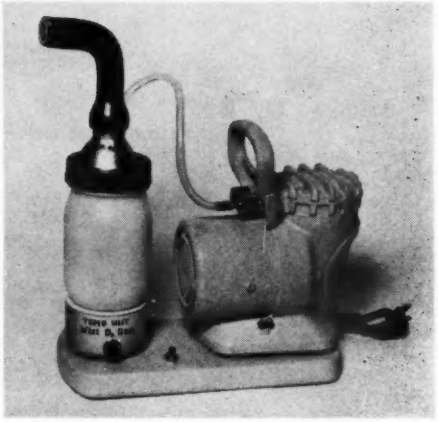

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David M. Berkson, MD; Gordon L. Snider, MD. JAMA, Vol. 173, No. 2, pp 135-138.

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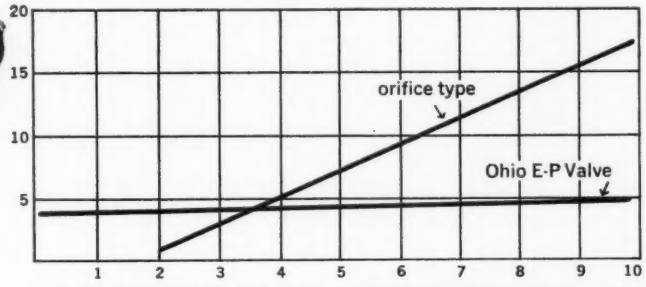

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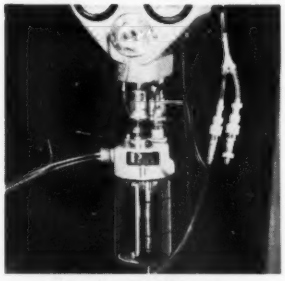

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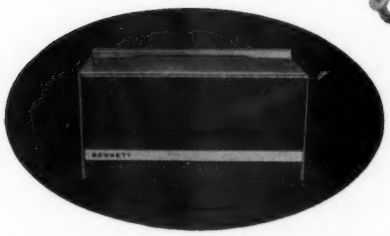

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Safety! A Must

AS Inhalation Therapists our responsibilities are many. However, we have three primary ones. First, the responsibility to the patient for his safety and for good therapy. Second, to the institution to which we belong. Third, to the profession.

What are our responsibilities to the patient? They are many, actually more than can be set down here. The more important of them is that of safety. One who upholds the safety requirements of the hospital may very well be lax in the safety of the patient. These should work hand in hand.

On many occasions the question is raised, how can I increase my safety potential? This is relatively easy. Nearly every Inhalation Therapist belongs to the A.A.I.T. An integral part of this Association is the Safety Committee. Your cooperation with this Committee is greatly needed. Should you have an accident, regardless of how trivial it may be, let the Committee know about it and the circumstances leading up to it. In this manner we can further help you and perhaps prevent the same thing from happening again elsewhere.

Each organized Chapter has a Safety Committee also. These Committees are working, as well as the National Committee, toward better safety practices for your department.

The institutions that utilize our services expect, and rightly so, the utmost effort on our part to reduce accidents. This can only be done with the proper knowledge and practice of all safety precautions. In the future a booklet outlining some of the more prominent accidents and their causes will be presented along with steps that can be taken to remove these hazards.

The success of this booklet does not lie with the Committee alone but with the membership as a whole. Therefore, it is important that each supervisor survey his department and advise the Committee of his ideas. In this manner, everyone can benefit.

Our third primary responsibility is to the profession. What is this? It means that each of us is obligated to the other to pass along ideas and tips that will benefit the group. We are a young organization, we are still, you might say, in our rompers. But this with diligence, work and a little sweat, can be overcome. Being young we are expected to take the back seat, so to speak. This, too, can be overcome. It isn't going to be done though, if the sights of the membership as individuals are lowered. Work, foresight and hindsight are needed. These can be accomplished only with the cooperation of everyone. You and you alone are responsible for the future of Inhalation Therapy as a profession and as a vocation. If this is kept in mind, graduating high school seniors can be encouraged to enter this field. The responsibility is ours, let's use it and not abuse it.

Richard T. Conover
Chief Inhalation Therapist
Duke University Medical Center
Chairman, AAIT Safety Committee

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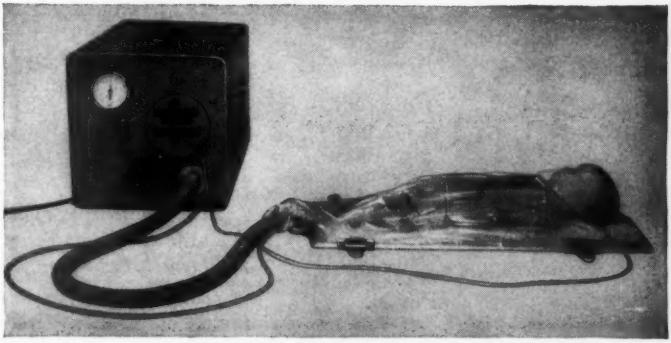
Triggered by the patient's own breathing impulses, the "Ucyclit" augments each spontaneous effort. It assists like an IPPB unit, but without masks or tubes at the airways. Negative pressure inside the soft plastic wrap expands the chest. A shell arched over the body provides space, but rests on the bed, not the patient.



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Tracheotomy Patients Present Problems in Resuscitation

by Reuben E. Schmugge

THERE are two different operations involving the trachea that are of interest to the Fire Department, and to other emergency personnel. These conditions are of special interest to us because they warrant special consideration during resuscitation and manual artificial respiration.

I. LARYNGECTOMY

A laryngectomy is performed when the patient has cancer of the throat or larynx (vocal cords and voice box). In this operation, the larynx is removed completely by surgery. The trachea is then turned to the front, and terminates in an opening in the neck slightly above the breastbone. (Fig. 1) A surgical tie-off is then made, completely sealing the mouth and throat from the trachea. After this operation, the patient breathes entirely through the hole in the neck. Because there is no longer any connection between the throat and the lungs, *the person can no longer be resuscitated by mouth-to-mouth artificial respiration or by using a resuscitator in the normal way over the mouth and nose.*

Fig. 1

Any type of resuscitation used must be accomplished through the opening in the neck. Fig. 2 shows the trachea as it normally appears. Fig. 3 shows the position of the trachea and the surgical tie-off in the throat after a laryngectomy has been performed. After the operation, a laryngectomy tube (Figures 4 and 5) is inserted in the opening. The tube is worn for a month or so after the operation, to keep the trachea open until the operation has completely healed. After this period, the laryngectomy tube is not worn except by very few laryngectomees.

Figure 4 shows the laryngectomy or tracheotomy tube, which is really a tube within a tube, in the normal position for use. Figure 5 shows the inside tube partly withdrawn. In case resuscitation is necessary and the laryngectomy tube is plugged, the inside tube may be removed and ventilation accomplished through the outer one. In case of emergency, the whole laryngectomy tube may be withdrawn to accomplish ventilation. Some patients prefer to wear a cotton filter pad over the tube to keep out foreign materials. This can also be removed for resuscitation.

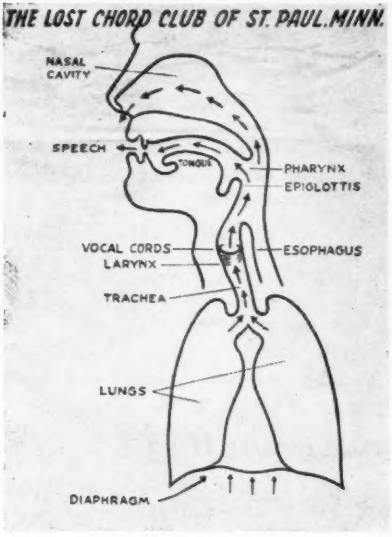

Fig. 2

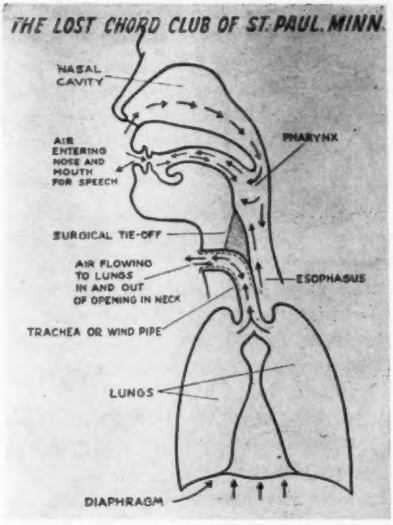

Fig. 3

After the surgery has healed, the male laryngectomee keeps foreign material out of the lungs by keeping his shirt collar buttoned over the tracheal opening. The female laryngectomee usually wears a scarf or a decorative bib over the opening. It is necessary, therefore, to make certain, on any victim requiring resuscitation, that there is no opening in the neck. Resuscitation through the mouth and nose of a laryngectomee is absolutely useless. It must be done through the tracheal opening.

II. PROCEDURE FOR RESUSCITATION

On all victims requiring resuscitation, loosen the clothing at the throat and check all the way to the breastbone to discover if there is an opening. You cannot rely on watching for scars, as the scars of the laryngectomy operation soon disappear. All manual and mechanical methods of resuscitation can be used on a laryngectomee.

A. *Manual Methods*

1. Mouth-to-Trachea
   Proceed as in mouth-to-mouth. Place mouth over opening in trachea and breathe into victim. *Avoid twisting his neck, as this may partially block the opening.* It is not necessary to close the victim's nose in mouth-to-trachea resuscitation. Mouth-to-trachea is more sanitary than mouth-to-mouth, because most infections come from the nose and throat, and air coming directly from the lungs is much more sterile. If direct contact repels you, however, you may place a handkerchief or gauze bandage over the opening. Mouth-to-trachea is the most ef-

continued on page 24

This material, based on a lecture by Dr. James A. Donaldson, Resident in Otolaryngology at Veterans Hospital, St. Paul, Minnesota, was prepared by Reuben E. Schmugge, Chief of the Fire School, together with members of the St. Paul Rescue Squad and in collaboration with the Lost Chord Club of St. Paul.

We are indebted not only to these people for permission to use it, but also to the Editor of THE FLOWMETER, publication of the Upper Midwest Chapter of the AAIT, in which it first came to our attention. —Ed.

many "firsts" at seventh annual meeting

by Frank Huston

THE Seventh Annual Meeting and Lecture Series of the American Association of Inhalation Therapists in Buffalo, New York, will see many revisions and numerous innovations at the 1961 convention.

To begin with, the meeting has been carefully condensed, thereby shortening its length by one day (meeting dates are Monday, November 6 through Thursday, November 9).

Registration will start Monday morning promptly at 9:00 a.m. The kick off speaker, Doctor Albert Andrews will address the group at 10:00 a.m. on the subject of inhalation therapy equipment. Following Doctor Andrews will be Doctor Hylan Bickerman discussing the importance of "Internal Public Relations".

Doctor Collins to be luncheon speaker

At the Monday luncheon, Doctor Vincent Collins, newly appointed Director of Anesthesiology at Cook County Hospital in Chicago, will lecture on the salient points of "What Makes a Professional". Following the luncheon, and for the remainder of the afternoon, the ever-popular Roundtables will be held under the direction of Mr. Don Gilbert, of the University of Michigan Medical Center.

A "first": pre-selection of Roundtable topics

Under a system which Mr. Gilbert has developed, the Roundtable topics are to be selected in advance of the meeting. Your program insert has them listed numerically and they are recorded in national headquarters when you send in your pre-registration. It is hoped that under this plan a more thorough coverage of these important topics can be developed.

Tuesday morning, Doctor Duncan Holaday, from the University of Chicago, will open the daily session with a lecture on "The Role of the Inhalation Therapist in Resuscitation". Following, service member Abe Lister of Shor's Medical Oxygen Service will discuss "Your Inhalation Therapy Service Company". The third speaker of the morning, Doctor Edwin Levine of the Edgewater Hospital in Chicago, will point out the necessity of "Organization of Training Programs in Inhalation Therapy".

A "first": free time for exhibits

Following the talk by Doctor Levine the exhibits will be opened. To help both the registrants and the manufacturers achieve the maximum coverage in this important area of product awareness, the exhibit hours on Tuesday and Wednesday will be

unchallenged by luncheons or lectures.

To complete the Tuesday afternoon session, at two o'clock Doctor Meyer Saklad will discuss the "Logistics of Inhalation Therapy Equipment". At three o'clock the "Factors Influencing the Effectiveness of Intermittent Pressure Breathing" will be pointed out by Doctor Theodore Noehren, Assistant Professor of Medicine at the University of Buffalo Medical School. The final speaker of the day, Doctor Jerome Maurizi of the University of Buffalo Medical School and the E. J. Meyer Memorial Hospital will lecture on the "Treatment of Carbon Dioxide Intoxication."

On Wednesday, November 8, the sessions will begin when Doctor Robert Lawrence from the University of Rochester Medical Center lectures on "The Use of Specialized Equipment". Following the Doctor, Sister M. Antonella, Administrator of St. Joseph's Infirmary in Louisville, Kentucky will discuss "The Administrator and the Inhalation Therapist". Doctor Howard Dayman of the University of Buffalo Medical School will end the morning session with a talk on "The Use of Simple Pulmonary Function Testing".

After the allotted exhibit time, the afternoon session will resume when Doctor Franz Reichsman, Assistant Professor of Psychiatry from the University of Rochester Medical Center lectures on the "Therapist-Patient Relationship". At three o'clock "Breathing Exercises for Pre and Post Operative Thoracic Surgery Patients" will be the topic discussed by Captain Frances Parks of Valley Forge General Hospital.

A "first": Banquet to follow Exhibitors Night

The annual Get Acquainted Hour, customarily known as Exhibitor's Night (the exhibitors are your hosts) will precede what we hope will become an annual event, the Banquet. As our speaker for this "first" we have Doctor Everett Baker from Louisville, Kentucky.

Election of Officers on Thursday

The final morning of the meeting will be devoted to the annual business meeting. Presiding will be the AAIT president, Joseph Klocek, R.N. who will start the proceeding with his report to the members. Following Mr. Klocek will be the chapter delegates reports, Committee reports, the Treasurer's report and the elections. The closing remarks will be given by Mr. Carriere, Executive Director.

At 12:30 the annual report luncheon will be held with Mr. Carriere giving to the members "The Challenge of Professionalism".

At the conclusion of the luncheon, chartered busses will take the registrants on a complete sight-seeing tour of the Niagara Frontier. Scenic and historical locations will be visited with special emphasis on Niagara Falls. Following the tour, dinner will be served at the Brock-Sheraton Hotel in a private dining room overlooking the Falls.

To round out the entire program; breakfasts and special meetings have been arranged for both the Industrial and Service groups, and conferences with the Executive Director can be obtained on Monday and Wednesday.

Registration fees for the annual meeting and lecture series are as follows: $45 to members; $55 to non-members. These cover the luncheons, banquet, sight-seeing tour and dinner.

REGISTRY SPRING EXAM

Deadline for receipt of applications including photos, letters of reference, fee, etc., is December 16, 1961.

Write to: Sister M. Yvonne, Registrar A.R.I.T. — St. Francis Hospital, LaCrosse, Wisconsin, AT ONCE.
(Allow time for photos to be made)

Your Association—And How It Operates

THIS IS THE third in a series of articles describing how your association is run. In this article, the job of the Executive Director is partially described, and reference is made to his relationship with various groups, committees, boards, industries, commercial enterprises, and governmental agencies.

Every cooperative enterprise needs a guide, and so it is customary for all associations, be they large or small, to have an executive director or, if you will, a business agent.

Your Executive Director was approached seven years ago by a group which included a member of the Advisory Board, a member of the Board of Directors, and representatives of two large industries, who asked if he would take on the task of building up the A.A.I.T.

Formerly, the group had called itself the Inhalation Therapy Association, and its operation had been on a purely voluntary basis. Realizing that inhalation therapy was a new frontier in medicine whose growth was inevitable, the group decided to call in outside professional help. Before doing this, however, it set itself up as a not-for-profit corporation in the State of Illinois.

At this time there were 177 paid members. There were no chapters. Neither was there a professional journal, although a newsletter had been published periodically.

The new organization did not have the sponsorship of any medical group then, and, of course, Registry did not exist.

Before signing the contract, your Executive Director was assured that he would have the utmost cooperation from all concerned; further, one of the industrial representatives made the statement that any financial losses would be taken care of.

Thoroughly to understand the responsibilities of the Executive Director, you should know that he is responsible to the Board of Advisors. You should also know something about the many faceted nature of our association.

The A.A.I.T. Constitution, as revised in November, 1959, states that "There shall be a Board of Advisors consisting of six physicians, three of whom shall be appointed by the American College of Chest Physicians and three of whom shall be appointed by the American Society of Anesthesiologists. All actions, matters of policy and items of public relations shall be presented to this Board for approval. No action shall be consummated until such approval has been secured."

Concerning the Executive Director, the Constitution says this: "The Board of Directors shall employ a professional Executive Director to conduct the business of the Association. He shall have only such powers as are delegated to him by the Board of Directors."

Obviously, since the Board of Directors is controlled by the Advisory Board, as indicated above, it follows that the Executive Director is also responsible to the six physicians, although somewhat indirectly.

What complicates the job of the Executive Director is the five-phase composition of our association.

First, there are the bona fide inhalation therapists, the Members.

Then come the Service Members and

Industrial Members, neither of whom may hold national office or vote in national elections.

Then there are the manufacturing companies who may or may not belong to the Association.

Finally, there are the two sponsoring medical groups, the American College of Chest Physicians and the American Society of Anesthesiologists.

So that operating the A.A.I.T. is similar to operating the United States Government in this respect: we must maintain a delicate system of checks and balances, so that no one group can dominate or "run" the A.A.I.T. to the detriment of the others.

For example, it would be wrong to permit the three physicians from the American College of Chest Physicians to impose their policies on the A.A.I.T. This cannot happen because they are working with three physicians from the American Society of Anesthesiologists, who have an equal number of votes.

Similarly, no industry can dominate the A.A.I.T. because there is an Industrial Advisory Board, representing eight of the companies that manufacture inhalation therapy gases and equipment. It is through this Board that suggestions are made and complaints are voiced. And there have been complaints about attempts to, shall we say, "influence" chapters.

Luckily, no individual, group, or company has dominated the A.A.I.T. at the expense of the membership. Although some people find it hard to think objectively—in fact, almost as hard as we do!—nevertheless our relationship with the many individuals and with the numerous component groups has, for the most part, been a friendly one.

continued on next page

Mr. Carriere (seated), Mr. Huston and Secretary Sandy Hamen discussing a layout problem in the INHALATION THERAPY journal.

Specifically, then, what are the duties of the Executive Director?

An Executive Director must be a number of things, but, most important, he must provide leadership and counsel.

He serves as a business agent, making recommendations to both the Board of Directors and the Advisory Board. He also works with the Service Members Committee, as well as with the Industrial Advisory Board.

Other Committees with whom he works are these: Admissions. Registry, Education, Nominating, Publications, Safety, and Research Information.

One of the most exacting of his duties is the control of all printed materials, including the journal, newsletter, various reprints, annual meeting programs, and all other printed matter.

He also plans and supervises all mass mailings, whether to hospitals, groups, or to the A.A.I.T. membership.

Responsible for the promotion of the A.A.I.T., he works with a number of people in an effort to stimulate membership and to create new chapters. This involves a very heavy correspondence, and an equally heavy travel schedule.

He also serves as a "trouble shooter" and attempts to get at the source of complaints be they about malpractice, questionable politics, or anything else.

If a complaint is definitely of a medical nature, he calls it to the attention of a physician or the Advisory Board since it is not the right of the Executive Director to get involved in medical affairs.

Recently, a chapter was torn between two factions, each trying to dominate at the expense of the other. The Executive Director called both groups together and pointed out the unprofessional nature of such conduct, asking the leaders to get together and "talk things out."

About the most demanding task assumed by the Executive Director is that of taking upon himself the financial responsibility for the operation of the American Association of Inhalation Therapists.

This in association management is unusual, since it is invariably the Board of Directors or the Secretary-Treasurer who assumes this responsibility. Again, due to the nature of our organization, the financial operation of the A.A.I.T. has been handled by the Executive Director.

It is a heavy responsibility, one which neither the Advisory Board nor the Board of Directors has had to bear.

Again, this is not a point in criticism of either Board, it is simply a statement of the facts.

Every year, Arthur Andersen and Company has examined the statement of cash receipts and disbursements, and its report has gone to all members of the Board of Directors and the Advisory Board.

Their latest report indicates that your Executive Director has a quite substantial investment in the A.A.I.T., representing money and services advanced to keep the association alive.

This so-called deficit financing has been necessary during the past several years, since the cost of operating and building a new association is always greater than its income.

However, with increased membership assured, we can look forward to a gradual decrease in our indebtedness, and to the day when we have enough members to get out of debt and remain "in the black."

Although the Executive Director is the business agent, as it were, he must also bear in mind that the A.A.I.T. exists not for his benefit, but for the benefit of the membership. So he must make an effort to stay behind the scenes, and let the Board Members, chapter presidents, and other interested people take an active role.

His job can best be described by the following quotation from an article written by Chester I. Barnard: "The fine art of executive decision consists in not deciding questions that are not now pertinent, in not deciding prematurely, in not making decisions that cannot be made effective, and in not making decisions that others should make."

In the next article, we shall complete our examination of the Executive Director's job, review the accomplishments of the last seven years, and outline some of our hopes for the future.

—Albert Carriere
Executive Director

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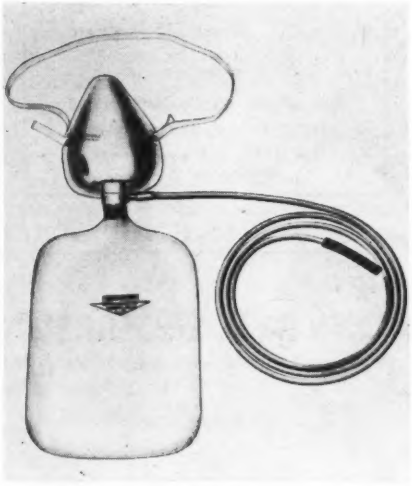
EQUIPMENT NEWS

(Information and photographs are supplied by the manufacturers or distributors.)

Disposable Oxygen Mask

Hudson Oxygen Therapy Sales Company announces a new improvement on their popular No. 7 Disposable Oxygen Mask. The inlet tube now enters at the neck of the mask instead of at the bottom of the reservoir bag. This inlet connection swivels to any position to facilitate use



at either side of the bed. It does away with the twisting of the tubing and the sizzling caused when the tubing enters the bottom of the bag. This improvement matches a utility feature formerly obtainable only on highly expensive masks.

No. 651

Oxygen-Air Proportioner

National Cylinder Gas Division of Chemetron Corporation offers a new oxygen- air proportioner, which provides an automatic safeguard against retrolental fibroplasia in hospital nurseries. It is described and illustrated in a new booklet, NM-235.000, available from NCG.

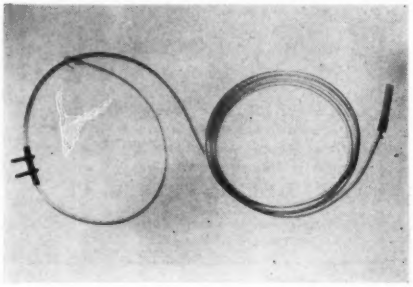
The booklet explains how the unit meters precise amounts of oxygen and air and continually monitors pressures and flow rates. Diagrams show performance factors, piping requirements and electrical wiring instructions.

The proportioner is set to deliver enriched air containing 40 per cent oxygen to incubators and bassinets. It permits the use of nebulizing equipment. **No. 652**

Improved Nasal Cannula

The Pharmaseal Laboratories of Glendale, California, is introducing an improved nasal cannula which combines several desirable features. First, it is the only one available with a 78-inch integral connecting tube. (The customary 60-inch ones are so often just a little too short.)

The integral connecting tube eliminates the need for a connector between cannula and tubing. Formerly it was more economical to use separate units and discard the cannula and re-use the connecting tube; but this unit with integral connecting tube sells for the same price as other cannulas without any connecting tubes.



It has a soft vinyl headband adjustable to any size. The end of the integral connecting tube is equipped with a rubber adapter which fits the outlet nipple on standard humidifiers. **No. 653**

Magnetic Sign Holder

American Hospital Supply Corporation, of Evanston, Illinois has a new sign holder for patients' doors. The Chieftain Magnetic Sign Holder contains 12 standard nursing messages stored inside the holder, and any three of them may be displayed simultaneously.

Two permanent magnets on the back attach to the steel mounting plate furnished, which may be put on the door, the wall, or the end of the patient's bed. **No. 654**

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CHAPTER ACTIVITIES

by Howard R. Dockham

Chapter Secretaries: Please send reports and notices to the new address:
Howard R. Dockham
4618 East Douglas
Tucson, Arizona

Belated congratulations to the KENTUCKY SOCIETY OF INHALATION THERAPISTS, who received their Charter May 31, 1961. Elected officers are: President, Mr. James C. McGaw; Vice-President, Mr. Martin A. Schoenblacher; Secretary-Treasurer, Mr. Charles D. Beam. At their July meeting, the KENTUCKY SOCIETY heard Mr. John Norwood, Assistant Administrator of the Kentucky Baptist Hospital, discuss "The Administrative Views on Inhalation Therapy as a New Profession."

At the July meeting of the NORTH TEXAS CHAPTER, the film "External Cardiac Massage" was shown. There was further discussion of a seminar which will be held in September at Children's Medical Center, Dallas, Texas at a date to be announced later.

At their July meeting, the SOUTHERN ILLINOIS CHAPTER heard Dr. Peter Kinsella of the Pulmonary Function Laboratory of Firmin Desloge St. Louis University Hospital, lecture on I.P.P.B. in the treatment of emphysema. The film, "A Clinic on the Recognition and Treatment of Respiratory Acidosis" was also shown.

At their June meeting, the SOUTHERN CALIFORNIA CHAPTER heard Dr. Eugene J. Ellis, Director of the Cardiovascular Department at the Hospital of the Good Samaritan, lecture on "The Use of Oxygen in Heart Disease" after showing a film on the subject.

The WESTERN NEW YORK CHAPTER, in their July meeting, discussed the feasibility of printing a booklet on facts and procedures used in inhalation therapy. No definite plan was announced, although a review of curriculum content of various schools was presented.

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continued from page 15

fective of the manual methods.

2. Back Pressure, Arm Lift and the Sylvester Systems
   Use these systems the same as at any other time, *but avoid twisting the neck.* In the back pressure arm lift method, this can be done by placing the victim's nose and chin in a shoe. *Be sure to protect the tracheal opening from dirt and dust.* This can be done with a handkerchief or with gauze.

B. *Mechanical Methods*

Both E&J Resuscitator and MSA Pneolator can be used. The baby facepiece on the E&J applied on a crosswise position at the tracheal opening (See Fig. 6) was found to be best suited for this purpose.

1. Inhalator: Proceed as with ordinary victim, placing facepiece cross-wise over tracheal opening.
2. Resuscitation: Check for obstructions. If laryngectomy tube is blocked, simply remove it. If tube is not plugged, resuscitation can be accomplished through it. Proceed as with ordinary victim, placing facepiece crosswise over the opening. If facepiece were placed on laryngectomee's mouth, the air would enter his stomach, which would begin to bulge.
3. Aspiration: Aspiration should be performed in the following manner. The catheter should be pinched shut while being inserted. It should be directed to one side, and inserted until resistance is felt. While rotating the catheter, slowly start withdrawing it before releasing the suction. This prevents the catheter from adhering to and tearing the lining of the bronchial tubes. If this does not entirely remove the obstruction, direct the catheter into the opposite side and aspirate it also. If an unconscious laryngectomee is discovered, who has a crust-like formation over the tracheal opening, it must be removed before resuscitation can take place. Upon removal of this crust formation, superficial bleeding may occur, but this is not at all dangerous.

Fig. 4

III. TRACHEOTOMY

A tracheotomy is a hole put into the trachea at the throat. It is performed in an emergency when the throat is blocked and ventilation can be achieved in no other way. It is also used to allow a patient to breathe during surgery on the larynx and other parts of the throat above the larynx. After surgery, the patient can breathe *either* through the hole in the trachea or through his mouth and nose. This is usually only a temporary measure, and after a period of time the tracheosotomy is allowed to heal shut, and the patient resumes normal respiration.

If such a person stops breathing, he can be given any of the accepted methods of manual artificial respiration. A mechanical resuscitator can be used either through

Fig. 5

Fig. 6

the opening in the trachea or the mouth and nose. *However,* whichever method is used, the alternate route should be closed off, or inefficient ventilation will result. This is also true of mouth-to-mouth or mouth-to-trachea methods.

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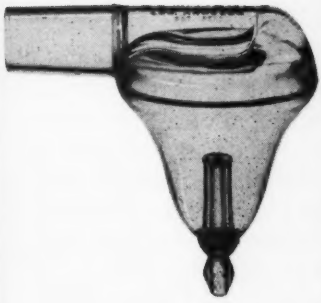

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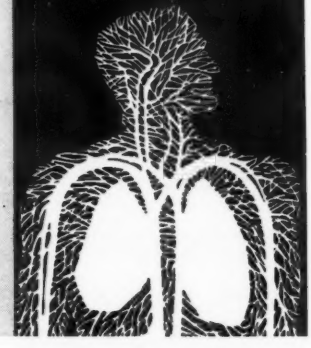

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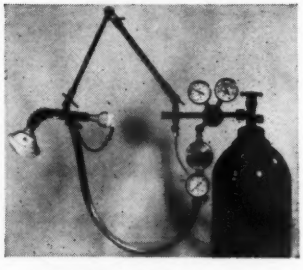

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ABSTRACTS

IMPORTANCE OF PARTICLE SIZE IN AEROSOL THERAPY, by Frank W. Lovejoy, Jr., Herbert Constantine and Lucien Dautrebande, in *Proceedings of the Society for Experimental Biol & Med,* 103:836, 1960.

This study compares the efficiency of two different types of nebulizers, producing different particle sizes, in the aerosolization of bronchodilator drugs, with respect to dose and side effects. Standard nebulizers commercially available in this country produce particle sizes ranging from about 1 to 15 microns in diameter, depending on the method of size measurement. The other nebulizer used in this study was the D-30, designed and produced in Belgium by Dr. Dautrebande. This generator produces particles all below 0.5 micron and averaging closer to 0.05 microns in diameter.

The bronchodilator used was made up as follows: 0.1% isoproterenol, 2% phenylephrine in a vehicle composed of equal parts of water and propylene glycol. It was found that at 5 pounds pressure driving the nebulizers, the standard one delivered 9 grams of this solution in 10 minutes, while the D-30 delivered only 0.3 grams. It was shown that a comparable degree of bronchodilation was obtained with the D-30 to that produced by the standard, *with only one thirtieth the dose.* Also, in all instances, the standard nebulizer was found to induce changes in the heart rate and blood pressure not caused by the D-30.

It is postulated that this difference is accounted for by the great difference in total dose of bronchodilator drug. It is asserted that the reason the D-30 can produce comparable bronchodilatation with so much less drug is that its smaller size particles do not rain out in the upper respiratory tree and get taken up into the general systemic circulation, but are deposited in the alveolar ducts and alveoli themselves where they are more effective. In other words, the smaller size permits a larger surface-area-to-dose ratio than the larger one.

The study was done on four normal healthy adult males, and the degree of bronchodilatation was measured by a plethysmographic method of determining airway resistance.

THE INTENSIVE CARE UNIT, by Drs. P. Safar, T. J. deKornfeld, J. W. Pearson and J. S. Redding, in *Anaesthesia,* 16:275, 1961.

This is a summary of a three-year experience in the Baltimore city hospitals with the establishment and operation of an intensive care unit.

The general organization and management are described, and an outline for the teaching program they conducted for the nursing staff in the unit. With regard to equipment they use, not much detail was given except with respect to respirators. The mainstay here is the Mörch piston respirator, of which they have eight. They also use the Bird and Bennett respirators for short term cases. The Mörch unit has additional humidity provided for the inspired air by means of a Walton humidifier connected with it. (Recent models of the Mörch have built-in humidity systems.—Ed.)

Ventilation is monitored periodically with a Wright ventilation meter placed in the circuit. It was found that arterial blood gas analyses were seldom needed, and that the patients when kept just slightly alkalotic did not fight the respirator and did quite well.

The most rigid aseptic technique is used in suctioning the tracheotomies. "No catheter is reused without first being sterilized, and no suction catheter is used for tracheal and pharyngeal suctioning at the same time."

CONTROLLED STUDY USING IPPB IN POST-SURGICAL PATIENTS, by James H. Sands, M.D., Constance Cypert, RIT, *et al,* in *Diseases of the Chest,* 40:128, 1961.

Study and control groups of patients free of cardio-respiratory disease who were admitted for upper abdominal surgery were routinely given IPPB and no IPPB postoperatively, respectively.

In no instance could IPPB be interpreted to have averted pulmonary complications, nor even to have assisted in more prompt return to normal tidal volumes or vital capacities, which were determined on all patients of both groups both pre- and postoperatively.

"Although well established in the treatment of some patients with cardio-pulmonary disease in the pre- and postoperative period, the indications should be clear-cut, and the indiscriminate use of IPPB discouraged."

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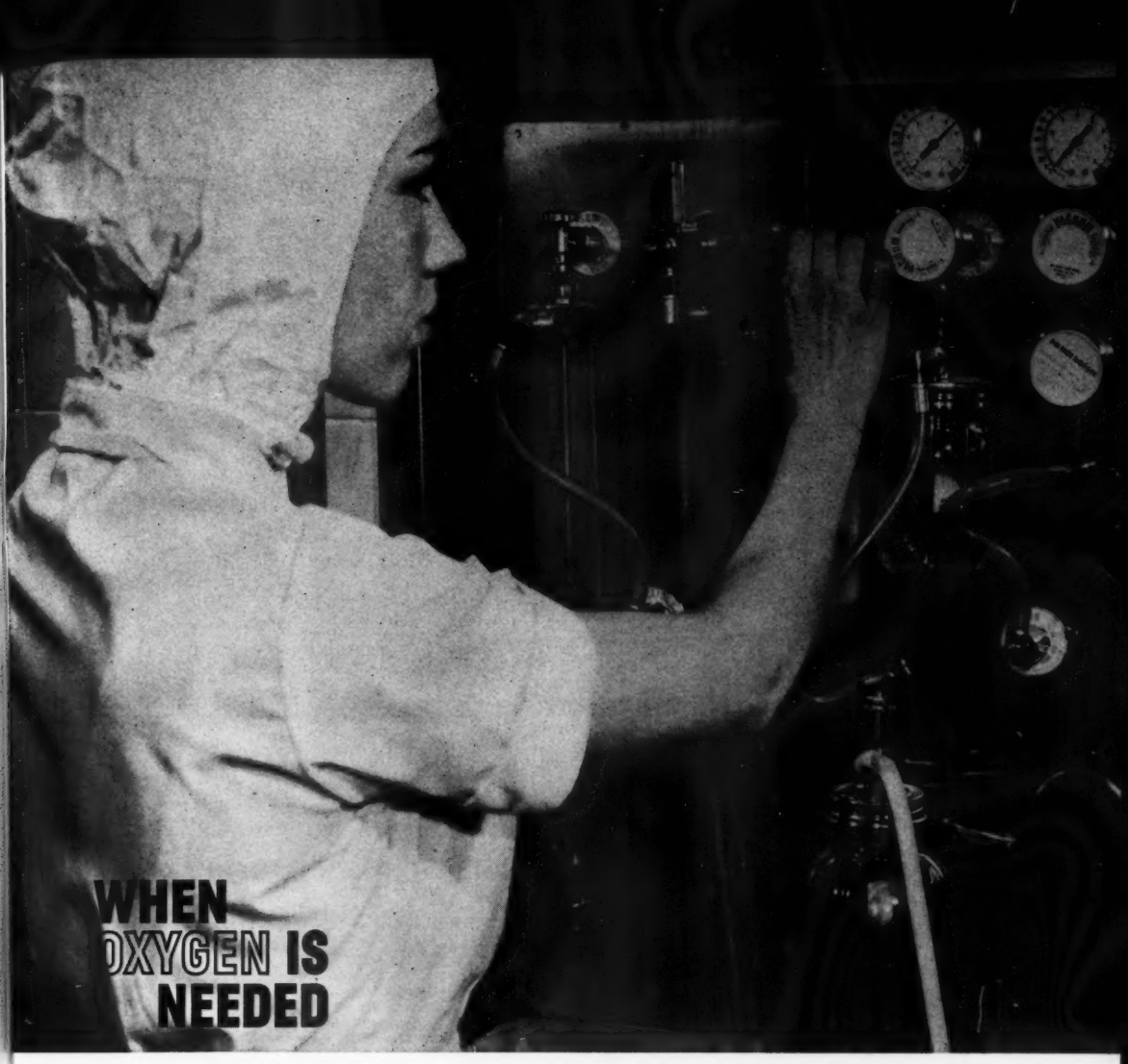

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*Cottrell, R. F., and Stoelting, V. K.: M. Times *89*:348 (April) 1961.

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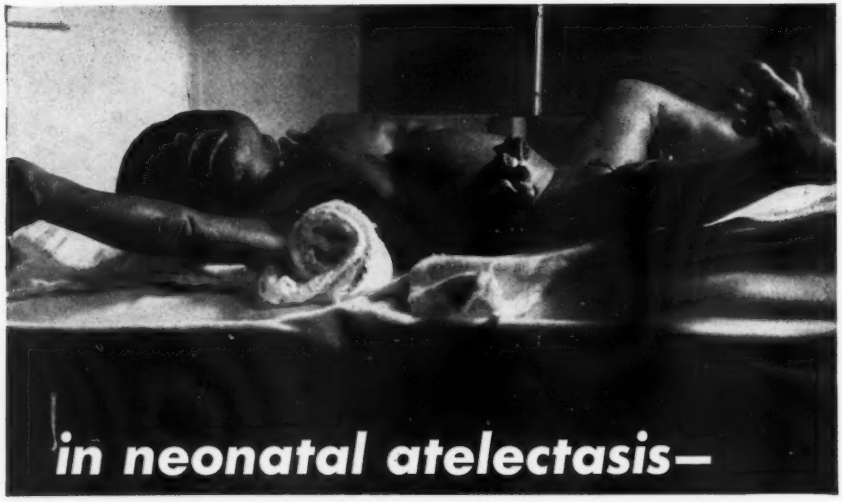

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1. Smessaert, Andre; Collins, V. J., and Krocum, V. D.: *New York J. Med.* 55:1587, June 1, 1955.
2. Banyai, A. L.: *Geriatrics* 14:621, Oct., 1959.

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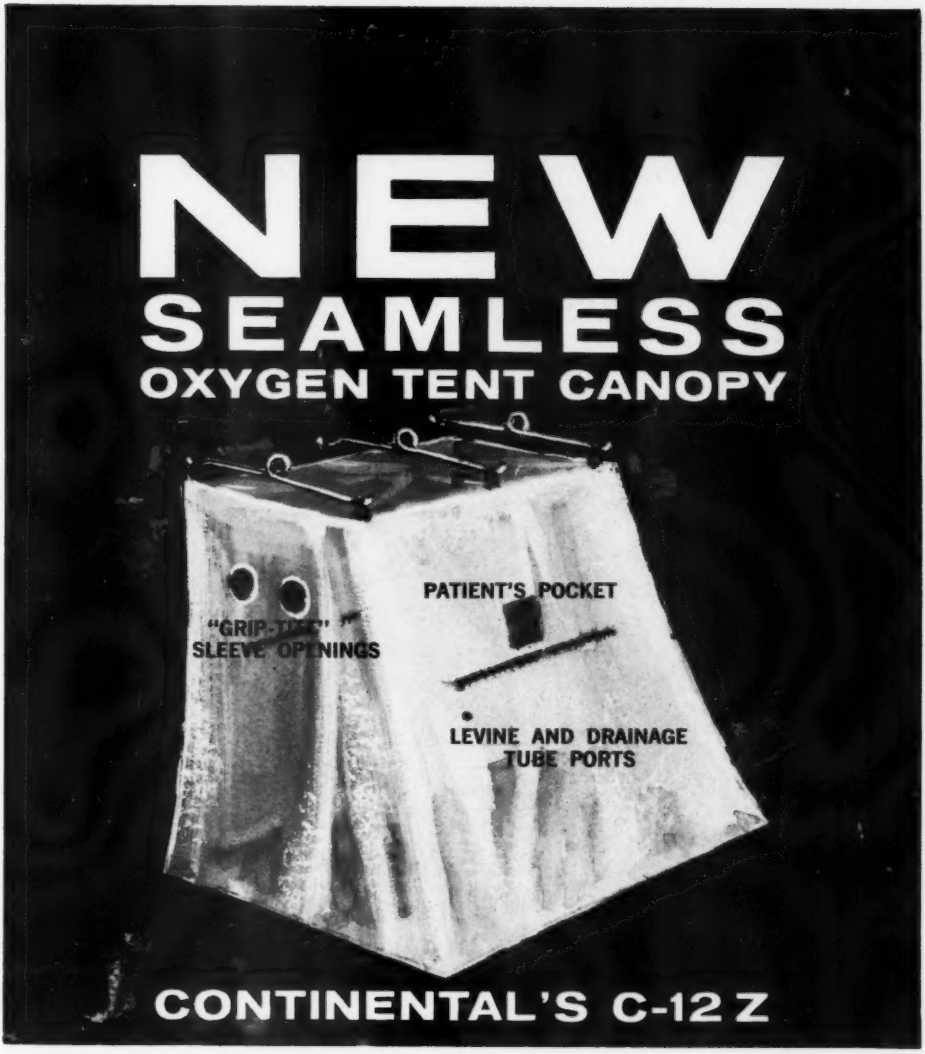

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